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IN THE U.S. PATENT AND TRADEMARK OFFICE

Inventor

Ulrich DZIALAS et al

Patent App.

10/712,796

Filed

13 November 2003

Conf. No. 7864

For

DEVICE FOR PRODUCING FIBERS FROM A
THERMOPLASTIC SYNTHETIC

Art Unit

1722

Examiner Rao, G

Hon. Commissioner of Patents

Box 1450

Appealed 14-Sep-05

Alexandria, VA 22313-1450

APPEAL BRIEF UNDER 37 CFR 41.37

Now come Appellants, by their duly authorized attorney, the undersigned, and respectfully submit their Appeal Brief under 37 CFR 41.37 in the case.

(I) REAL PARTY IN INTEREST

The real party in interest is Reifenhauser GmbH and Co. Maschinenfabrik, a limited liability company of Germany, by reason of an assignment recorded 12 February 2004 at Reel 014991, Frame 0118.

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(ii) RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences or judicial proceedings known to Appellants, Appellants' legal representative or assignee which may be related to, directly affect or be directly affected by, or have a bearing on the Boards decision in the pending appeal.

(iii) STATUS OF CLAIMS

Claims 1 to 15 were originally presented. Claims 1, 4, 5, 7, 12 were amended in the course of prosecution.

Claims 3, 6 and 11 have been cancelled.

Claims 1, 2, 4, 5, 7 through 10 and 12 through 15 were finally rejected.

Claims 1, 2, 4, 5, 7 through 10 and 12 through 14 stand appealed.

(iv) STATUS OF AMENDMENTS

No amendment was filed subsequent to the final action.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

The claimed device is a device for producing fibers of thermoplastic synthetic resin and comprises a nozzle body (2) formed with a melt passage (3), page 10, lines 11 through 14) through which molten synthetic resin can be fed by a screw type extruder.

The nozzle 2 has, at an outlet end an outlet side (4) with a multiplicity of nozzle bores (10) of which only one can be seen in FIG. 1, the others being arrayed in front of or behind the one shown as will be apparent from FIG. 3. At the outlet side (4) these bores 10 open (see page 11, lines 11 through 16) at a flat surface (see FIG. 2). Respective members are shaped to fit into these bores as shown at 11 and each is formed along an outer periphery thereof in a region of contact with the respective bore with at least one nozzle channel (5) which terminates at the flat surface at which the bore (10) opens.

By providing such a channel in a fitting insert or member, a particularly fine filament can issue and depending upon the number of such channels, a comparatively large number of filaments can emerge from any bore. The device is a device for producing fibers by the process known as melt blowing, the product being a melt blown nonwoven mat which can be highly absorptive and is an economical replacement for a wide variety of fabrics used for example for sanitary purposes. Up to now achieving a high orifice density in a spinneret has always been a problem and by comparison with earlier systems, the present technique in which an insert is form fitted within the bore and has a channel milled in its periphery to form a respective orifice represents a major advantage both with respect to the orifice density and with respect to possible variability. This can include variations in the type size and number of orifices per bore.

Claims 2, 4, 5, 7 through 10 and 12 through 15 are directed to other features of a melt blowing arrangement and recite for example a multiplicity of channels in the periphery of which member, e.g. as shown in FIGS. 4 and 5 (see claim 7), a configuration in which the inset member is tapered (claim 8).

(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The claims have been rejected under 35 USC 103(a) as being unpatentable (obvious) from BUEHNING Patent 5,632,938 in view of MENDE et al Patent 5,017,112.

Appellants submit that this rejection cannot stand.

(vii) Argument

As noted above, the sole ground of rejection is a rejection on obviousness based upon BUEHNING Patent 5,632,938 as taken with MENDE et al Patent 5,017,112.

BUEHNING discloses a melt blowing head but is recognized by the Examiner as lacking the multiplicity of bores. By implication, therefore, the BUEHNING reference is also recognized by the Examiner as failing to have the following elements of claim 1:

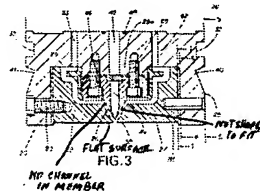
(A) A flat surface at the outlet side of the nozzle body at which said bores (10) open.

(B) Respective members (11) shaped to fit into said bores (10) and received therein.

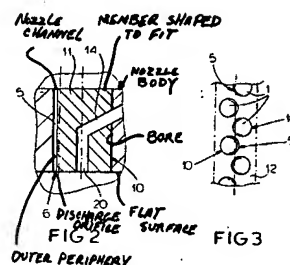
(C) Each member (11) formed along an outer periphery thereof in a region of contact with a wall of the respective bore (10) with at least one nozzle channel (5) for said melt opening at a discharge orifice (6).

(D) The discharge orifice (6) being in the bore (10) at the flat surface.

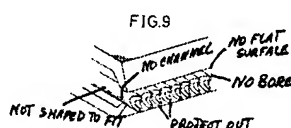
The lack of any bore as defined in the present claims and the insert and the channel of the insert at the wall of the bore is underscored by FIG. 3 of BUEHNING below (LABELING SUPPLIED).



By contrast FIG. 2 of the present case shows the relationship of these elements (LABELING SUPPLIED)



BUEHNING has been combined with MENDE et al but MENDE et al also does not have, as claim 1 requires, either a plurality of bores as defined in claim 1 or any of elements A through D as outlined for BUEHNING (see especially FIG. 9 of MENDE et al Patent 5,017,112) (LABELING SUPPLIED).



Note that in MENDE et al the capillaries are received between two plates, project beyond the plates and themselves do not have nozzle channels formed along outer peripheries thereof in a region of contact with a wall of the bore.

While it well may be obvious to modify BUEHNING to include the capillaries of MENDE et al, that will provide neither the bores terminating at a flat surface as required by the present claims or the elements or inserts in those bores with channels formed in those elements. There is, therefore, no way in which a combination of MENDE et al and BUEHNING can meet or suggest claim 1 or any claim in this case.

Claims 7 and 12

It is respectfully submitted that embodiments having a multiplicity of channels in each insert against the wall of the bore as these claims require would not be suggested in the combination of references which do not teach or suggest such channels in the first place.

In MENDE et al the capillaries are formed with configurations at their ends to break up a flow but that would not yield a multiplicity of orifices within each of a multiplicity of bores terminating at a flat surface as the claims require.

Claims 8, 9, 13 and 14

These claims require a tapering configuration of the insert or plug and absent the teaching or suggestion of an insert or plug in the references as combined, these claims must be allowable as well.

These claims in the case distinguish structurally over any combination that would be obvious from these references and thus the rejection must be reversed.

Atty's 22709

Pat. App. 10/712,796

A charge form is enclosed applying the fee of \$500.00 to
a charge card of the undersigned.

Respectfully submitted,
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Enc: PTO 2038 Charge Form
(viii) Appendix

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(viii) Claims Appendix

1 1. A device for producing fibers of a thermoplastic
2 synthetic resin, comprising:

3 a nozzle body formed with at least one melt passage for a
4 molten thermoplastic synthetic resin and, at an outlet side of said
5 nozzle body with a multiplicity of bores communicating with said
6 passage, said outlet side of said nozzle body having a flat surface
7 at which said bores open; and

8 respective members shaped to fit into said bores and
9 received therein, each of said members being formed along an outer
10 periphery thereof, in a region of contact with a wall of the
11 respective bore, at least one nozzle channel for said melt opening
12 at a discharge orifice in the bore at said flat surface.

1 2. The device defined in claim 1, further comprising a
2 compressed-air feed for directing compressed air at an acute angle
3 onto a thermoplastic synthetic resin strand emerging from said
4 orifice.

1 4. The device defined in claim 2, further comprising
2 guide flanks formed along opposite edges of said surface and
3 extending generally perpendicular thereto.

1 5. The device defined in claim 2, further comprising
2 compressed-air passages opening at said surface.

1 7. The device defined in claim 1 wherein each of said
2 members is formed with a multiplicity of said channels in the
3 periphery thereof.

1 8. The device defined in claim 5 wherein each of said
2 members tapers over the length thereof.

1 9. The device defined in claim 8 wherein each of said
2 members is frustoconical in configuration.

1 10. The device defined in claim 5 wherein said nozzle
2 body has at least one row of said bores extending over a width of
3 the nozzle body.

1 12. The device defined in claim [[6]] 2 wherein each of
2 said members is formed with a multiplicity of said channels in the
3 periphery thereof.

1 13. The device defined in claim 1 wherein each of said
2 members tapers over the length thereof.

1 14. The device defined in claim 13 wherein each of said
2 members is frustoconical in configuration.

1 15. The device defined in claim 1 wherein said nozzle
2 body has at least one row of said bores extending over a width of
3 the nozzle body.